NOTICE

All drawings located at the end of the document.

RF/RMRS-98-290

SPECIAL TASK HEALTH AND SAFETY PLAN FOR MONITORING OF NATURAL ATTENUATION AT IHSS 118.1

Revision 0

December 1998

This Special Task Health and Safety Plan addresses the task-specific hazards associated with the IHSS 118.1 Natural Attenuation Monitoring Project. The IHSS 118.1 Natural Attenuation Monitoring Project will be conducted using this Health and Safety Plan for the task- and area-specific hazards, and the Health and Safety Plan for the Groundwater Program (RFP/ER-SAF-94-GMP) for programmatic and general hazards.

Groundwater Monitoring Program Subcontractor

Special Task

Health and Safety Plan

Monitoring of Natural Attenuation at IHSS 118.1

Introduction

The purpose of this Special Task Health and Safety Plan is to identify specific hazards and provide the additional requirements for safe work during the Monitoring of Natural Attenuation Field Investigation at Individual Hazardous Substance Site (IHSS) 118.1 - Multiple Solvent Spills West of Building 730. The requirements of this Special Task Health and Safety Plan are in addition to the requirements of the Groundwater Monitoring Program Health and Safety Plan, RFP/ER-SAF-94-GMP Rev. 1.

Purpose and Scope

This Special Task Health and Safety Plan will apply to activities involved with the Sampling and Analysis Plan for Monitoring of Natural Attenuation at IHSS 118.1, RF/RMRS-98-252.

Additional References

In addition to the references cited in the Groundwater Monitoring Program Health and Safety Plan, the following references are included.

- EMD/OP GT.01 Logging Alluvial and Bedrock Material
- EMD/OP GT.05 Plugging and Abandonment of Boreholes
- EMD/OP GT.06 Monitoring Wells and Piezometer Installation
- EMD/OP GT.10 Borehole Clearing
- EMD/OP GT.17 Land Surveying

GROUNDWATER MONITORING PROGRAM
SPECIAL TASK HEALTH AND SAFETY PLAN

Revision No. 0

1. Items 1 – 9 to be completed by RMRS Special Task Project Manager.

Project Name IHSS 118.1 Natural Attenuation Monitoring

Task Well Drilling, Installation, Development, and Sampling

Requested by Robert G. Smith, Jr.

Proposed Start-Up Date December 14, 1998 **Project/Task No.** N/A

APPROVALS

TITLE	SIGNATURE	DATE
RMRS Project Manager	Shaun L. Garner Shaun Garner	12-2-98
RMRS Health and Safety Supervisor	Peggy Schreckengast Peggy Schreckengast	11-30-98
RMRS Radiological Engineer	B Estabrooks Bates Estabrooks	11/30/98
RMRS Quality Assurance	Greg D DiGregorio Greg DiGregorio	11-30-98
TEC Health and Safety Specialist	Harold E Sanchez Harold Sanchez	11-30-98

Note to Project Managers:

A signed and completed copy of the Health and Safety Plan, safety briefing (p. 18), and crew member signatures (p.25) must be included in the project file.

Groundwater Monitoring Program Subcontractor

SPECIAL TASK
HEALTH AND SAFETY PLAN

Job No.

2. **Project Description:** Installation of up to 8 monitoring wells using a hollow-stem auger drilling rig; well development; collection of ground water samples from all wells; handling and containerization of drill cuttings in drums; geologic core sample collection; and footing drain sample collection (B771).

3. **Location:** Individual Hazardous Substance Site (IHSS) 118.1 - Multiple solvent spills west of Building 730. (See map on page ~~25~~ 26.)

MS 12/4/98

4. **Facility/Work Site Description:** Areas to be worked are in the vicinity of the T-9/T-10 Tank group. Ground surface is relatively level. Overhead and underground utilities are present in the work area.

5. **Proposed Personnel and Tasks:**

Project Manager Shaun Garner - RMRS

Field Team Leader John Boylan - Tierra Environmental Consultants

Proposed Field Team	Job Function/Tasks
See Section 20	

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN Job No.

6. Confined Space Entry

A confined space is defined as any space not currently used or intended for human occupancy, having a limited means of egress, which is subject to the accumulation of toxic contaminants, a flammable or oxygen deficient atmosphere, or other hazards, such as engulfment, or electrical or mechanical hazards should equipment be inadvertently activated while an employee is in the space. Confined spaces include but are not limited to storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, air pollution control devices, smoke stacks, underground utility vaults, sewers, septic tanks, and open top spaces more than four feet in depth such as test pits, waste disposal trenches, sumps and vats.

Will this task require entry into any confined or partially confined space?

___ YES - Describe below
X No

7. Cutting and Welding

Will this task involve use of a cutting torch or welding?

___ YES - Describe below
X No

8. Other Potential Hazards

- X Chemical
- X Radiological
- ___ Fire/Explosion
- ___ Heat Stress
- X Electrical
- X Machinery/Mechanical Equipment
- X Trips, Slips, Falls
- ___ Trenching/Shoring
- X Heavy Equipment/Vehicular Traffic
- X Overhead Hazards
- ___ Unstable/Uneven Terrain
- X Other - Describe below

6,7,8 Description/Other

underground utilities (various)
cold stress
noise

9. I, _____, attest that this information is accurate to the best of my knowledge and hereby request a Health and Safety Plan for the task(s) designated above.

Shawn L James 12-2-98

Signature Date

Title

Groundwater Monitoring Program Subcontractor

SPECIAL TASK
HEALTH AND SAFETY PLAN

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10. Chemical/Radiological Hazard Evaluation

Waste Media

___ Airborne Contamination
___ Surface Contamination
X Contaminated Soil
X Contaminated Groundwater
___ Contaminated Surface Water
___ Solid Waste
X Liquid Waste
___ Sludge

Hazardous Characteristics

___ Ignitible
___ Corrosive
___ Reactive
___ Explosive
X Toxic (non-radiological)
___ Radioactive

Substance

This task will involve the reasonable possibility of exposure to the substances listed below at concentrations or in quantities which may be hazardous to the health of the site personnel.

Primary Hazard (Rate: low, med, high, ext)

Substance	Inhalation of Gases/ Vapors	Inhalation of Dusts/ Mists	Ingestion	Dermal Absorption of Solids/ Liquids and/or Skin Contam.	Dermal Absorption of Gases/ Vapors	Corrosive/ Irritant	Ignit-ability	Reactivity/ Explosion

See Attachment, Table 1

Substance	Exposure Limit	IDLH Level	Health Effects

TABLE 1

HAZARDOUS SUBSTANCES

Primary Hazard Rating	Substance	Physical Description	Exposure Path	Corrosive/ Irritant	Ignitable	Reactive/ Explosive	Exposure Limit	IDLH Level	Health Effect
High	carbon tetrachloride	Colorless liquid with a characteristic ether-like odor	inhalation, absorption, ingestion, contact w/ eyes or skin	no	no	No	2 ppm (skin)	200 ppm	Irritates eyes; depress central nervous system; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination; potential occupational carcinogen
High	1,1,2,2-tetrachloroethane	Colorless to pale-yellow liquid with a pungent *chloroform-like odor*	inhalation, absorption, *ingestion, contact w/* eyes or skin	no	no	No	1 ppm (skin)	100 ppm	Nausea, vomiting, abdominal pain, tremor fingers; jaundice, hepatitis, liver tenderness; dermatitis; monocytosis, kidney damage; potential occupational carcinogen
High	chloroform	Colorless liquid with a pleasant odor	inhalation, absorption, ingestion, contact w/ eyes or skin	no	no	No	2 ppm	500 ppm	Irritates eyes, skin; dizziness, mental dullness, nausea, confusion; headache, fatigue; anesthesia; enlarged liver; potential occupational carcinogen
High	bromoform	Colorless to yellow liquid with a chloroform-like odor	inhalation, absorption, ingestion, contact w/ eyes or skin	no	no	No	0.5 ppm (skin)	850 ppm	Irritates eyes, skin, respiratory system; Central Nervous System depressant; liver and kidney damage
High	carbon disulfide	Colorless to faint yellow liquid with a sweet ether-like odor	inhalation, absorption, ingestion, contact w/ eyes or skin	no	Class IB Flam.	No	4 ppm (skin)	500 ppm	Dizziness, headache, poor sleep, fatigue, nervousness, anorexia, low-weight, psychosis; Parkinson-like syndrome, ocular changes; coronary heart disease; *gastritis; liver, kidney injury; eye, skin* burns; dermatitis; reproductive effects
High	perchlorethylene	Colorless liquid with a mild, chloroform odor	inhalation, absorption, ingestion, contact w/ eyes or skin	no	no	No	25 ppm	150 ppm	Irritates eyes, nose, throat; nausea, flushed face, neck; vertigo, dizziness, incoordination; headache, sleepiness; skin redness; liver damage; potential occupational carcinogen

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN Job No.

11. **Ambient Air/Site Monitoring Procedures**

The following instruments shall be used to monitor the work environment and workers' breathing zones prior to site entry and at the specified intervals.

	Instrument	Monitoring Frequency				
X	PID (HNU, OVM) w/11.7eV lamp	(Cont.)	15min.	30min.	hourly	other
	OVA	Cont.	15min.	30min.	hourly	other
	Combustible Gas Indicator	Cont.	15min.	30min.	hourly	other
	H2S Detector	Cont.	15min.	30min.	hourly	other
	Colorimetric Detector Tubes	Cont.	15min.	30min.	hourly	other
X	Other (describe below)	(Cont.)	15min.	30min.	hourly	other

Description/Other: Integrated air sampling: Sampling will be conducted for carbon tetrachloride, chloroform, 1,1,2,2-Tetrachloroethane, perchloroethylene, carbon disulfide, and bromoform. NIOSH methods 1003, 1019, and 1600, or equivalent,will be followed. Integrated sampling is to be initiated if positive indications on the PID are observed in the breathing zone and when upgrading PPE to Level B.

12. **Action Levels**

Task personnel shall observe the following Action Levels:

Instrument	Action Level	Specific Action
PID	>background in BZ (breathing zone), sustained	Pause work. If feasible, use a large fan to remove VOCs from the breathing zone. If this is not effective for all personnel, evaluate upgrade in PPE. If level B upgrade is required and PID monitoring of the EZ perimeter exceeds the action level, the EZ must be expanded to prevent exposures to collocated workers.
Radiological	See Attachment A	
Particulate	See Attachment A	
Combustible Gasses	See Attachment A	

Attachment A of Special Task HASP for Monitoring of Natural Attenuation at IHSS 118.1

Site Location and Description:

Location : IHSS 118.1 and vicinity

Description: Install 8 new wells using drilling rig

Suspect Contaminants:

MONITORING REQUIREMENTS — ACTION LEVELS

	PEL	Instrument	Range	Level D modified	Level C	Level B	Notes
Hydrocarbons		TVA-1000B or Minirae w/ 11.7 ev lamp					
		PID	0-2,000 ppm	>bkg	N/A	*	*Any sustained reading above background in the BZ
		FID	0-50,000ppm	>bkg	N/A	*	
Radionuclides		NE Electra DP6B	Alpha 0-1,000,000 cpm Beta Gamma 0-1,000,000 cpm	*	*	*	*At minimum comply RSP 09.01 Radioactive surface contamination limits, if RWP is in place RWP limits, hold points, and PPE requirements will be followed.
		Ludlum 2929/43-10-1	Alpha 0-999k cpm Beta Gamma 0-999k cpm	*	*	*	*At minimum comply RSP 09.01 Radioactive surface contamination limits, if RWP is in place RWP limits, hold points, and PPE requirements will be followed.
		Bicron Analyst Fiddler	Low Energy Radiation Radiation set up for 17 kev x-rays from transurantics 0-500k cpm	*	*	*	* Any reading above 2* background will stop work HSS will contact Rad Engineering for further instructions.
Particulates	3 mg/m3	MIE Miniram	0.1-100 mg/m3	0-1.5mg /m3	*	*	*Dust Control (misting) will be used above 1.5 mg/m3
Combustible Gases		Bachrach Sentinal 44 CGI	1 -100% LEL	*	*	*	If >25% LEL, withdraw from area immediately

Personal Monitoring

Contaminant	Analytical Method
Monitoring for VOA's using personal sampling methods, if necessary, upgrade for respiratory	NIOSH Methods

Personal Protective Equipment

Type of Work	Level D DOE Coveralls	Level D Modified	Tyvek Coveralls	Saranex Coveralls	Nitrile Gloves	Silvershield Gloves	Viton Gloves	Leather Work Gloves	Face Shield	Rubber Apron	Full Face Respirator	Level B Supplied Air
Drilling		(3), *		*	*		*	*	(1)			(2)
Handling / Logging Core		(3), *		*	*							(2)
Installing new wells		(3), *		*	*		*	*	(1)			(2)
Handling IDM		(3), *		*	*		*	*	(1)			(2)
H&S Monitoring		(3), *		*	*							(2)

(1) If free liquids are encountered, personal in contact with soils will upgrade to Face Shields. Sustained readings of VOC's >bkg in breathing zone will require backing off and allowing samples to vent. If no wind is present, a large industrial size fan will be used to dissipate vapors, if available.

(2) If workers must work where VOC readings are sustained in the breathing zone, work will stop and supplied air respiratory protection will be used and more protective PPE requirements.

(3) If RWP is needed

(*) Required under normal operations or can be changed at the discretion of Health and Safety Specialist.

Notes

PEL = Permissible Exposure Limit
PID = Photoionization Detector
FID = Flameionization Detector
ppm = parts per million
cpm = counts per minute
mg/m3 = milligrams per cubic meter
PPE = Personal Protective Equipment
VOA = Volatile Organic Analyte
IDM = Investigative derived materials (typically soils)
OSHA = Occupational Safety and Health Administration
EPA = U.S. Environmental Protection Agency
USCG = U.S. Coast Guard

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN

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13. Personal Monitoring

___ Passive Dosimeter X Personal Air Sampling ___ Other

Description/Other: charcoal tubes

14. Biological Monitoring/Medical Surveillance

X **This project requires medical surveillance or biological monitoring procedures beyond the provisions of the routine medical surveillance program, see description below**

Description: All field personnel must be medically cleared in writing to wear negative and positive pressure respirators.

15. Onsite Control

Control boundaries have been established, and the Exclusion Zone (the contaminated area), Hotline, Decontamination Line, Contamination Control Zone and Support Zone (clean area) have been designated and are identified as follows:

EZ: Drill site designated by cones and/or caution tape
CRZ: Around EZ and at decontamination line marked by cones or caution tape
SZ: All other areas, not specifically designated

For level B work, caution tape will be required for the EZ and CRZ.

(Name) Harold Sanchez **has been designated to coordinate access control on the work site during this task. No unauthorized person shall be allowed beyond the Contamination Control line.**

Groundwater Monitoring Program Subcontractor

SPECIAL TASK
HEALTH AND SAFETY PLAN

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16. Personal Protective Equipment

Location	Job Function/Task	Initial Level of Protection
Controlled Zone	Drilling operations w/no detectable VOCs in BZ (PID)	B C (D) 1 2 3 other
		B C D 1 2 3 other
	Any operation with VOCs > background sustained in the breathing zone.	(B) C D 1 2 3 other
	For support ops with detectable VOCs in BZ (PID) and/or visible solvent contamination	B C D 1 2 3 other
		B C D 1 2 3 other
Decontamination Zone	Support operations w/no detectable VOCs in BZ (PID)	B C (D) 1 2 3 other
		B C D 1 2 3 other
	For support ops with detectable VOCs in BZ (PID) and/or visible solvent contamination	(B) C D 1 2 3 other

List the specific protective equipment and material (where applicable) for each of the Levels of Protection identified above

Level B X

- X Pressure demand airline
- ___ Pressure demand airline with escape provisions
- X Pressure demand SCBA

Level C ____

- ___ Half face Air Purifying Respirator
- ___ Full face Air Purifying Respirator
- ___ Full face canister Air Purifying Respirator
- ___ Standard work clothes
- ___ Hard hat, steel toed boots, safety glasses
- ___ Ear protection during drill rig operation
- ___ Inner latex gloves
- ___ Outer NBR (Nitrile Butyl Rubber) gloves

Level D Mod

- X Standard works clothes (DOEs)
- X Hard hat, steel toed boots, safety glasses
- X Ear protection during drill rig operation
- X Inner latex gloves
- X Outer NBR gloves (Viton)
- X Leather gloves for any work with tools
- X Saranex coveralls

Level ____ ____

Where air purifying respirators are authorized, N/A are the appropriate canisters/cartridges for use with the specific substances and concentrations anticipated. Cartridges shall be replaced at the start of each work day.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE HEALTH AND SAFETY OFFICER AND THE PROJECT MANAGER

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN

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17. **Decontamination**

Personnel and equipment leaving the Controlled Zone shall proceed through the following decontamination stations and procedures from the decontamination zone:

Personnel Decontamination

Station	Procedure
CRZ	Wash water and Liquinox solution, rinse water Wash visible VOC contamination and soils off gloves and boots. Remove and dispose of PPE in a manner which ensures no skin contact to outside of PPE. Boots may be reused if clean.

Equipment Decontamination

Station	Procedure

The following decontamination equipment is required:

wash basins, detergent, waste containers

Emergency decontamination procedures:

Immediately wash skin if personnel get solvent on skin.
Immediately change clothing (DOEs) if solvent gets on clothes.
Take all personnel requiring emergency decon to medical (due to high absorption of the contaminants of concern through the skin).

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18. Confined Entry Procedures ___X___ Not Applicable

Yes	N/A		Yes	N/A	
___	___	Provide Forced Ventilation	___	___	Refer to Personal Protective Equip. (#16)
___	___	Test Atmosphere For:	___	___	Refer to Emergency Procedures (#29)
___	___	(a) $\%O_2$	___	___	Other Special Procedures
___	___	(b) %LEL			
___	___	(c) Other			

Descriptions/Other:

19. Cutting/Welding Procedure ___X___ Not Applicable

Yes	N/A	
___	___	Relocate or Protect Combustibles
___	___	Wet Down or Cover Combustible Floor
___	___	Check Flammable Gas Concentrations (%LEL) in air
___	___	Cover Wall, Floor, Duct and Tank Openings
___	___	Provide Fire Extinguisher

Other Special Instructions:

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20. Onsite Organization and Coordination

Project Manager: Shaun Garner
Field Team Leader: John Boylan
Site Safety Officer: Harold Sanchez

Field Team Name	Job Function
John Boylan - Tierra	Field Supervisor/Project Geologist
Harold Sanchez - Tierra	HSS
Tom Lutherer - Tierra	Geologist/Support Staff
Bob Koehler - Tierra	Geologist/Support Staff
Ray Michaels - Tierra	Sampler/Support Staff
Gary Stretesky - Tierra	Samples/Support Staff
Gary Halbersleben - Tierra	Sampler/Support Staff
Anthony Rodriguez	Driller
Mark Stevenson	Driller
Jason Cortez	Driller
Jerry Werth	Driller

21. Special Instructions

Use of a ventilation fan during periods in the work area will be used to ensure that no accumulations of VOCs occur in the breathing zone.

The area downwind of the work area will be controlled to limit access to personnel.

Viton gloves will be worn any time a potential for contact with solvents or contaminated media exists.

Notify all appropriate building or facility managers of work being performed in areas that could potentially affect building or facility operations.

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22. **Sanitation Requirements**

Potable water supply available on work site? X Yes B701

Portable toilets required on work site? ___ Yes If Yes, how many? _____
X No

Temporary washing/shower facilities required at work site? X Yes If yes, describe below.
___ No If no, state location existing facilities.

Description: Portable eye wash with shower nozzle

23. **Field Procedures Change Authorization**

Instruction Number to be changed

Duration of Authorization Requested
___ Today only
___ Duration of Task

Date:_____

Description of Procedures Modification:

Justification:

Person Requesting Change:

Name

Title

Signature

Verbal Authorization Received From:

Name

Time

Title

Approved By
(Signature of person named above to be obtained within 48 hours of verbal authorization)

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN Job No.

24. **Emergency Procedures** This page is to be posted at prominent location on site.

Yes X No ____ On-site Communications Required? Emergency Channel #2911 or emergency channel EMAD 2

Nearest Telephone B701

Fire and Explosion

In the event of a fire or explosion, if the situation can be readily controlled with available resources without jeopardizing the health and safety of yourself, the public, or other site personnel, take immediate action to do so, otherwise:

1. **Notify emergency personnel by calling** 2911.
2. **If possible, isolate the fire to prevent spreading.**
3. **Evacuate the area**

Chemical Exposure

Site workers must notify the site health and safety officer immediately in the event of any injury or any of the signs or symptoms of overexposure to hazardous substances identified below:

Substances Present	Symptoms of Acute Exposure	First Aid
See Table 2 . .		

TABLE 2

CHEMICAL EXPOSURE

Substance	Symptoms of Acute Exposure	First Aid
Carbon tetrachloride	Irritates eyes; depress central nervous system; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
1,1,2,2-tetrachloroethane	Nausea, vomiting, abdominal pain; tremor fingers; jaundice, hepatitis, liver tenderness; dermatitis; monocytosis; kidney damage	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
chloroform	Irritates eyes, skin; dizziness, mental dullness, nausea, confusion; headache, fatigue; anesthesia; enlarged liver	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
bromoform	Irritates eyes, skin, respiratory system; Central Nervous System depressant; liver and kidney damage	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately

Substance	Symptoms of Acute Exposure	First Aid
Carbon disulfide	Dizziness, headache, poor sleep, fatigue, nervousness, anorexia, low-weight; psychosis; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; liver, kidney injury; eye, skin burns; dermatitis; reproductive effects	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
Perchlorethylene	Irritates eyes, nose, throat; nausea; flushed face, neck; vertigo, dizziness, incoordination; headache, sleepiness; skin redness; liver damage; potential occupational carcinogen	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately

Maximum concentrations identified from previous soil and water samples:

1) carbon tetrachloride	8.1E7 µg/kg (soil)	1.1E6 µg/L (water)	2.5E8 µg/L (DNAPL)
2) 1,1,2,2-tetrachlorethane	6.1E6 µg/kg (soil)		
3) chloroform	3.8E6 µg/kg (soil)	1.6E5 µg/L (water)	3.8E6 µg/L (DNAPL)
4) bromoform	1.7E6 µg/kg (soil)		
5) carbon disulfide	1.1E5 µg/kg (soil)		
6) perchlorethylene	2.5E6 µg/kg (soil)		

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN

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24. **Emergency Procedures** - Cont'd

On Site Injury Or Illness

In the event of an injury requiring more than minor first aid, or any employee reporting any sign or symptom of exposure to hazardous substances, immediately take the victim to Occ. Health located at B122, phone 2594. In the event of life-threatening or traumatic injury, implement appropriate first-aid and immediately call for emergency medical assistance at 2911. The nearest designated trauma center is Avista Hospital located at Louisville, phone 303-673-1000

Designated Personnel Current in First Aid/CPR (Names)

Harold Sanchez	

Designated Back-Up Personnel (Names)	Function

Required Emergency Back-Up Equipment

Emergency Response Authority

Shift Superintendent is the designated site emergency coordinator and has final authority for first response to on-site emergency situations.

Upon arrival of the appropriate emergency response personnel, the site emergency coordinator shall defer all authority but shall remain on the scene if necessary to provide any and all possible assistance. At the earliest opportunity, the site safety officer or the site emergency coordinator shall contact the project coordinator or health and safety officer.

Project Coordinator Shaun Garner Phone (w) 303-966-6588 (h) 303-439-2047

Health and Safety Officer Peggy Schreckengast Phone (w) 303-966-6790 (h) 303-344-1264

Groundwater Monitoring Program Subcontractor SPECIAL TASK HEALTH AND SAFETY PLAN Job No.

25. **Safety Briefing**

The following personnel were present at pre-job safety briefing conducted at _____(time) on_____ ____(date) at_____(location), and have read the above plan and are familiar with its provisions:

Name	Signature

Fully charged ABC Class fire extinguisher available on site? YES ___
Fully stocked First Aid Kit available on site? YES ___
All project personnel advised of location of nearest phone? YES ___
All project personnel advised of location of designated medical facility or facilities? YES ___

_____
Printed Name of Field Team Leader or Site Safety Officer

_____
Signature Date

Monitoring of Natural Attenuation at IHSS 118.1

Response to Unknown Hazards

RMRS Operations Directive OPS-DIR-001, Rev. 2, provides direction concerning encounters with unknown hazards during the performance of activities in the field. The policy specifies that:

> "In the event unanticipated hazards or conditions are encountered, the project activities will pause to assess the potential hazard or condition. The potential hazard or condition will be evaluated to determine the severity or significance of the hazard or condition, and whether the existing project controls are sufficient to address the hazard or conditions. Based on this initial evaluation, a determination will be made whether to proceed with controls currently in place; segregate the condition or hazard from the project activity; if it can be done safely; or curtail operations to address the unexpected hazard or condition." Concurrence down the selected path must be obtained from the RMRS Technical Support Division Director, Terry Overlid, or his designee.

In addition to this policy, the RMRS project manager and field supervisor will be notified immediately, as well as the RMRS Safety Supervisor. All personnel are required to comply with this policy to ensure that field operations are conducted safely and in an environmentally responsible manner.

Table 1 Emergency Contact Telephone, Pager, and Radio Numbers

Fire:	x2911	**Poison Center:**	303-629-1123
Ambulance:	x2911	**Security:**	x2911

Nearest Emergency Medical Center: Building 122 (see attached map)

Nearest telephone: B701

Additional Project Telephone Numbers:	**Extension**	**Pager**	**Radio**
Director – Technical Support: Terry Overlid	x4407	212-6359	
Manager – Characterization: Marla Broussard	x6007	212-6261	#3740
H&S Manager: Ken Jenkins	x5374	212-5693	#4505
Project Manager: Shaun Garner	x6588	212-6290	#3799
Field Supervisor: John Boylan	x5182		#3783
Groundwater Manager: Steve Singer	x3387	212-6255	#3708
H&S Officer: Peggy Schreckengast	x6790	212-6358	#3702
HSS: Harold Sanchez	x4953		#3754
HAZMAT Emergency Response	x2911		
Occupational Health General Information	x2594		
Rad Engineering: Bates Estabrooks	x3769	212-6469	

MONITORING OF NATURAL ATTENUATION AT IHSS 118.1
Preliminary Hazard Analysis (PHA)

30-Nov-98

A field investigation involving natural attenuation monitoring of a groundwater volatile organic compound plume at Individual Hazardous Substance Site (IHSS) 118.1, Multiple Solvent Spills West of Building 730 at the Rocky Flats Environmental Technology Site (RFETS), is scheduled to be accomplished during the 1st and 2nd quarters of FY99. This PHA/AHA is intended to fulfill the criteria of a Job Safety Analysis (JSA) in accordance with DOE Order 5480.9A, *Construction Safety and Health Program.* It is intended to identify and address job specific safety concerns in conjunction with the Groundwater Monitoring Program Health and Safety Plan and is not intended to replace or override any other applicable document. Any perceived conflict with higher level documents will be addressed by the responsible Health and Safety representative. A brief summary of the planned activities is as follows:

- Operation of drilling equipment in support of monitoring program installation.
- Well installation and development.
- Groundwater level and field parameter measurement.
- Groundwater sample collection.
- Evaluation of groundwater geochemistry data.
- Construction safety precautions in accordance with 29CFR1926 and applicable chapters of the Health and Safety Practices manual will be followed while working at IHSS 118.1. This will include the use of hard hats, safety glasses with side shields, and safety shoes at all times, and use of the "buddy system".

Any questions may be directed to John Boylan (X5182) or Peggy Schreckengast (X6790).

	Approved:	**Signature and Date**
PM	Shaun Garner	Shaun L Garner 12/2/98
FS	John Boylan	11/30/98
H&S	Peggy Schreckengast	Peggy Schreckengast 11-30-98
RE	Bates Estabrooks	11/30/98

MONITORING OF NATURAL ATTENUATION AT IHSS 118.1

Activity Hazard Analysis (AHA)

30-Nov-98

Activity	Hazard	Preventive Measures
General operation of drilling equipment	General safety	Construction safety will be in accordance with 29CFR1926, 29CFR1910, and DOE 5480.9A. When there no potential for contact with contaminated soils or liquids, personnel required to enter the equipment operating area for this project will wear a Level D work uniform specified in the Groundwater Monitoring Program Health and Safety Plan; work clothes with long sleeves (DOE coveralls are available), safety shoes, safety glasses with side shields, a hard-hat and an orange vest for personnel in the vicinity of the drilling rig during movement. A trained and qualified Health and Safety Specialis (HSS) will be required for continuous support.
	Pinch or crush injury	Personnel involved with drill site setup and rig operation will be watchful of pinch and crush point potential, especially rotating parts. Loose clothing will be taped when working around rotating equipment. Leather gloves will be worn at the discretion of the Site Safety Officer. Only experienced drilling rig operators will be utilized for investigation operations. All field crew members will be trained in the use and location of emergency kill switches. Personnel will at no time place any part of their body beneath a lifted load.
	Noise	Hearing protection is required during operation of the drilling rig when noise levels exceed 85 dB. Monitoring to characterize noise levels will be conducted. Noise dosimetry will be utilized for personnel who may be exposed to an average of 85 dB for 8 hours. Personnel exposed above this level must be included in a hearing conservation program.

Activity	Hazard	Preventive Measures
	Cuts from hand or power tools.	Leather gloves will be worn during all work involving hand or power tools. All circuits will be Ground Fault Circuit Interrupt (GFCI) protected and extension and power supply cords will be inspected prior to use.
	Electrical shock; overhead/ underground utilities	At no time shall the drilling equipment be operated within 10 feet of potentially energized overhead utilities (electrical, steam). Insulating mats and gloves may be required at the discretion of the Excavation Specialist and/or H&S Supervisor. This determination will be made during the utility locate operation. Underground utilities shall be located prior to drilling operations by K-H Construction Management personnel.
	Slips, trips, and falls	Pre-activity work area survey to identify potential hazards associated with operations. Secure area, use safety shoes and glasses.
	Vehicular and pedestrian traffic.	Site control will be maintained using cones, hazard tape, and other appropriate barriers.
Drilling investigations/well installation	Chemical exposure	In addition to Level D (work clothes, safety shoes, safety glasses, hard-hats), Personnel Protective Equipment (PPE) shall be modified to include saranex and two pair of chemical resistive gloves for handling drilling components during use. This will include inner nitrile gloves and outer viton gloves. HSS shall evaluate the need to upgrade PPE to Level B depending on Breathing Zone (BZ) monitoring results with a Photoionization Detector (PID) >background indications. Work shall be paused for any evaluation of this type. Personal BZ air monitoring shall be accomplished using integrated sampling if PID indications are positive and PPE is upgraded to Level B. Use of a ventilation fan directed at the borehole work area may be used, when appropriate, to minimize possible exposure to airborne solvent during conditions of no ambient wind air flow.

Activity	Hazard	Preventive Measures
		The area downwind of the drill site shall be controlled such that no inadvertent personnel exposures to airborne solvent occur.

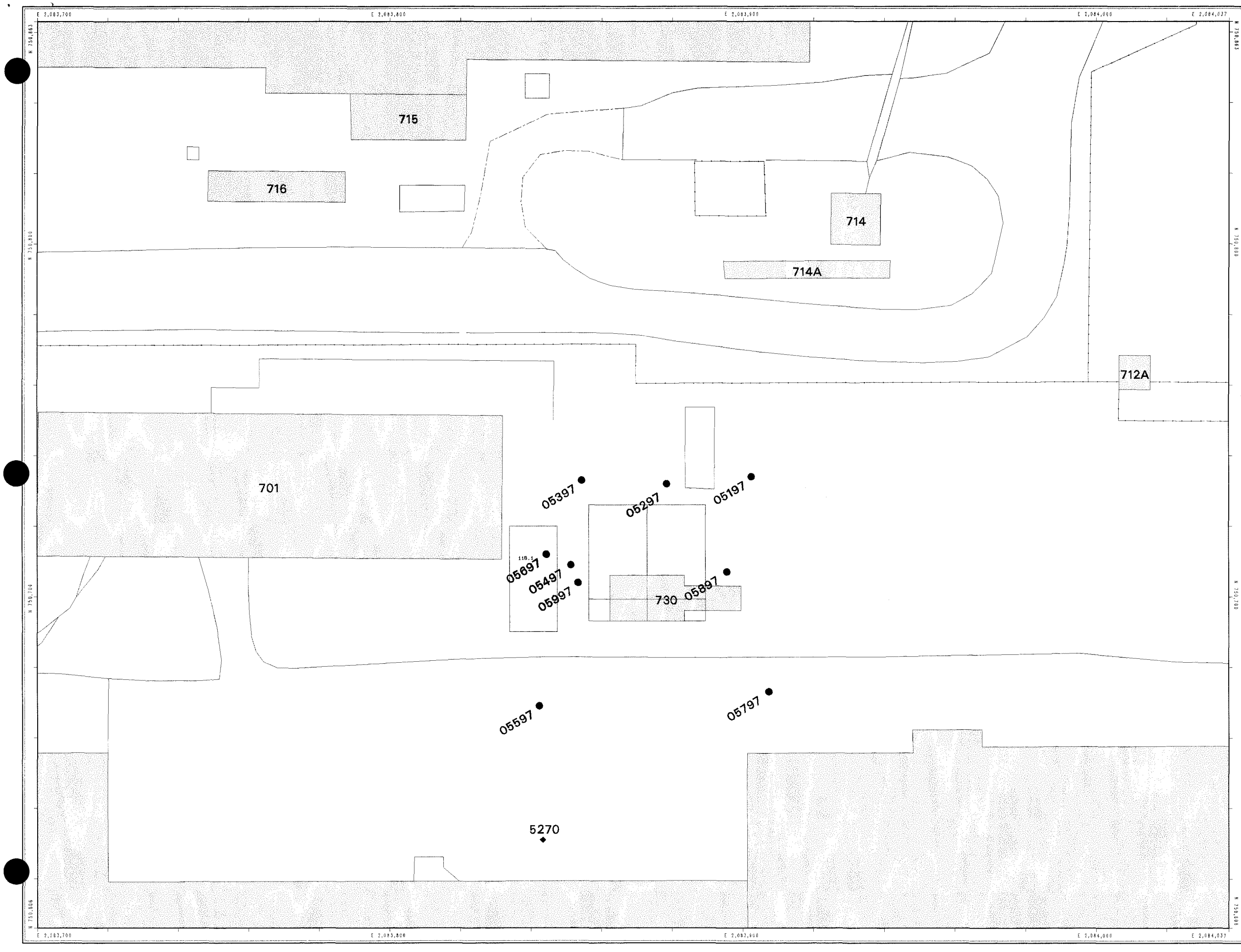
Approved: **Signature and Date**

PM	Shaun Garner	Shaun L Garner 12/2/98
FS	John Boylan	11/30/98
H&S	Peggy Schreckengast	Peggy Schreckengast 11-30-98
RE	Bates Estabrooks	11/30/98

I have read the contents of this Special Task HASP, am familiar with the 1994 Groundwater HASP, and agree to comply with the contents within.

Name	Signature	Title	Date

Figure 1-1
IHSS 118.1
Map Showing Proposed Well Configuration



EXPLANATION

- Proposed Groundwater Monitoring Wells
- Geoprobe Boreholes & Wells (FY97)
- Pre-existing GW Monitoring Wells
- Process Waste Tanks (IHSS 132)
- IHSS 118.1
- Former Location Carbon Tetrachloride Tank

Standard Map Features

- Buildings and other structures
- Fences and other barriers
- Paved roads
- Dirt roads

DATA SOURCE:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSI, Las Vegas. Digitized from the orthophotographs. 1/95

Scale = 1 : 320
1 inch represents approximately 27 feet

10 0 20 40ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:
RMRS
Rocky Mountain Remediation Services, L.L.C.
Geographic Information Systems Group
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P.O. Box 464
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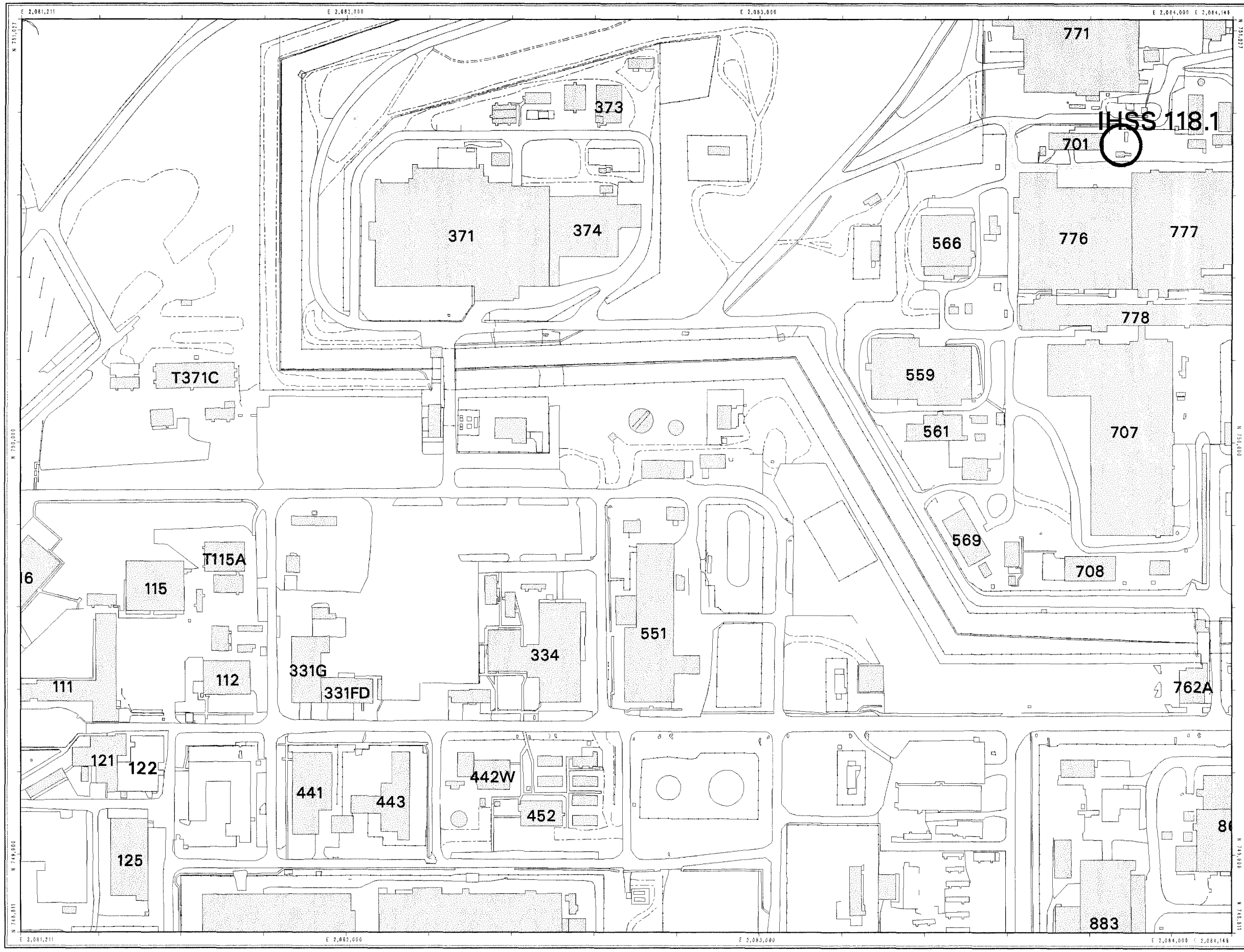
MAP ID: 98-0228 November 20, 1998

/gis2/projects/fy98/98-0228/ihss_118-2.aml



Medical Facility Location Map

EXPLANATION

Medical (Bldg. 122)

Work area around IHSS 118.1

Standard Map Features

Buildings and other structures

Fences and other barriers

Paved roads

Dirt roads

Route to Medical (Bldg. 122) from IHSS 118.1

DATA SOURCE:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs. 1/95

Scale = 1 : 2860
1 inch represents approximately 238 feet

50 0 100 200ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

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MAP ID: 99-0071

December 02, 1998

/gis2/projects/ty99/99-0071/mxd_ihss118-1.aml